

ABSTRACT OF THE DISCLOSURE

In a system for cleaning process chambers or vacuum lines, the progress of cleaning a process chamber or vacuum line is monitored by measuring the cleanliness of a sample of the inside surface of the process chamber or vacuum line. To this end, the surface sample is subjected at some times to the action of cleaning gases in the process chamber or vacuum line and at other times to the action of a test plasma generated by a test plasma source communicating with the process chamber or vacuum line via an interface. The test plasma excites the atoms on the surface sample and produces radiation that is measured by a spectrometer that sends signals to control means for closing a solenoid valve for feeding cleaning gas into the process chamber or vacuum line when cleaning is sufficient. This prevents excessive and overlong cleaning liable to degrade the inside surface of the process chamber or vacuum line.